

FIG. 1

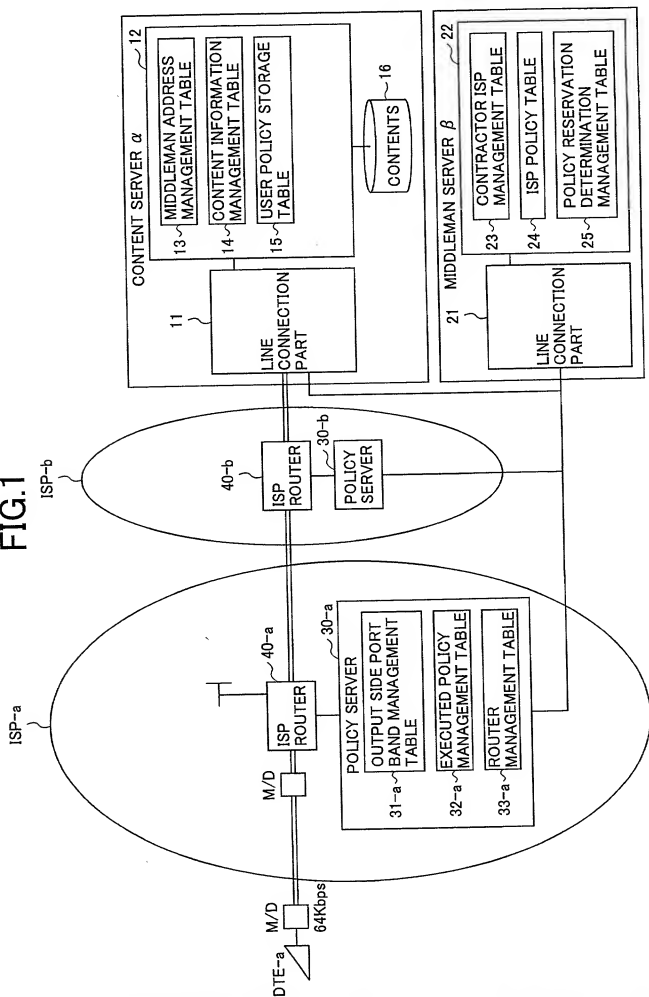


FIG.2A

MIDDLEMAN SERVER IP ADDRESS
138.10.0.1

FIG.2B

CONTENT NAME	CAPACITY
CONTENT A	57.6Mbyte
CONTENT B	28.8Mbyte

FIG.2C

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2	64K	2001/9/1 1000	2001/9/1 12:00	134.30.0.1

NETWORK ADDRESS	POLICY SERVER IP ADDRESS	CLIENT MANAGEMENT SERVER IP ADDRESS
130.0.0.0/9	130.40.0.3	130.40.0.4
132.0.0.0/9	132.50.0.3	132.50.0.4
132.0.0.0/9	132.40.0.3	134.40.0.4

FIG. 3A

ORDER RECEPTION NO.	POLICY SERVER IP ADDRESS	USER IP ADDRESS	CONTENT SERVER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS
$\beta 1$	134.40.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	134.30.0.1
$\beta 2$	132.50.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	132.40.0.1
$\beta 3$	130.40.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	130.30.0.1

FIG. 3B

CONTENT SERVER IP ADDRESS	ORDER -ING NO.	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
136.10.0.1	$\alpha 1$	$\beta 1$	134.40.0.3	
		$\beta 2$	132.50.0.3	
		$\beta 3$	130.40.0.3	

FIG. 3C

ROUTER	PORT NO.	LINE BAND FOR USE (bps)	LINE BAND LEFT FOR EACH RESERVATION PERIOD (bps)											
			0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Rc	P10	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
Rc	P11	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
Rd	P14	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M
Rd	P16	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M

FIG. 4A

FIG. 4B

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.100.2	136.100.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.10.0.1	β 1	134.100.5	P10

ROUTER PORT IP ADDRESS	ROUTER VIRTUAL IP ADDRESS
134.100.1	134.100.5
134.200.1	
134.300.1	
134.400.1	134.500.5
134.500.1	
134.600.1	
134.200.2	

FIG. 4C

FIG. 5

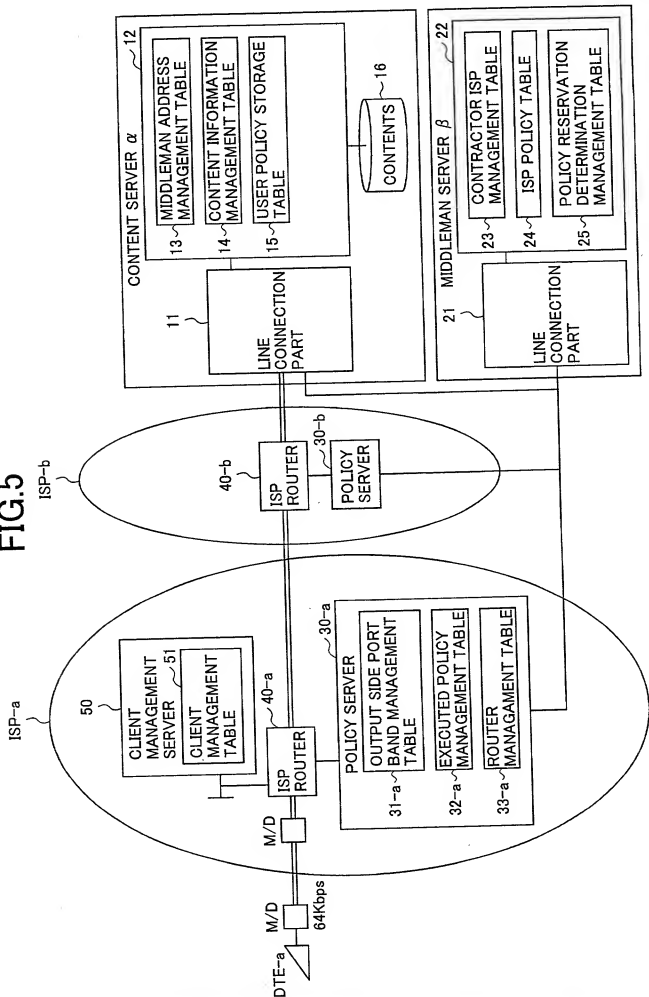
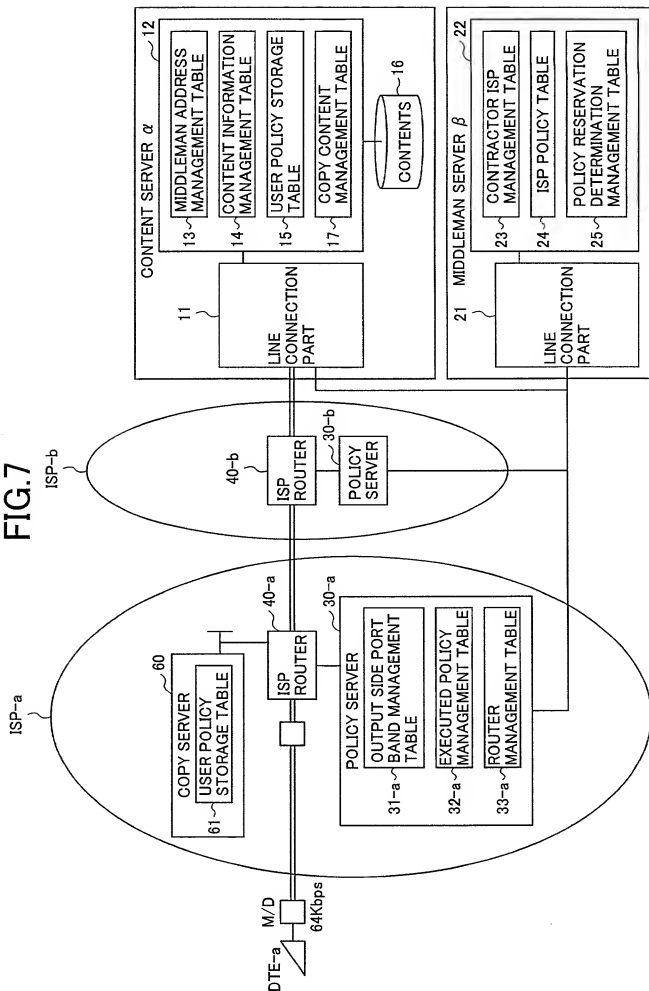


FIG.6

USER IP ADDRESS	CONNECTION BAND (bps)
130.10.0.2	64K
130.20.0.2	128K
130.10.0.3	

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FIG. 7



NETWORK ADDRESS	COPY SERVER IP ADDRESS
130.0.0.0/9	130.40.0.2
132.0.0.0/9	132.50.0.2
134.0.0.0/9	134.40.0.2

FIG.8A

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2	64K	2001/9/1 10:00	2001/9/1 12:00	

FIG.8B

FIG. 9

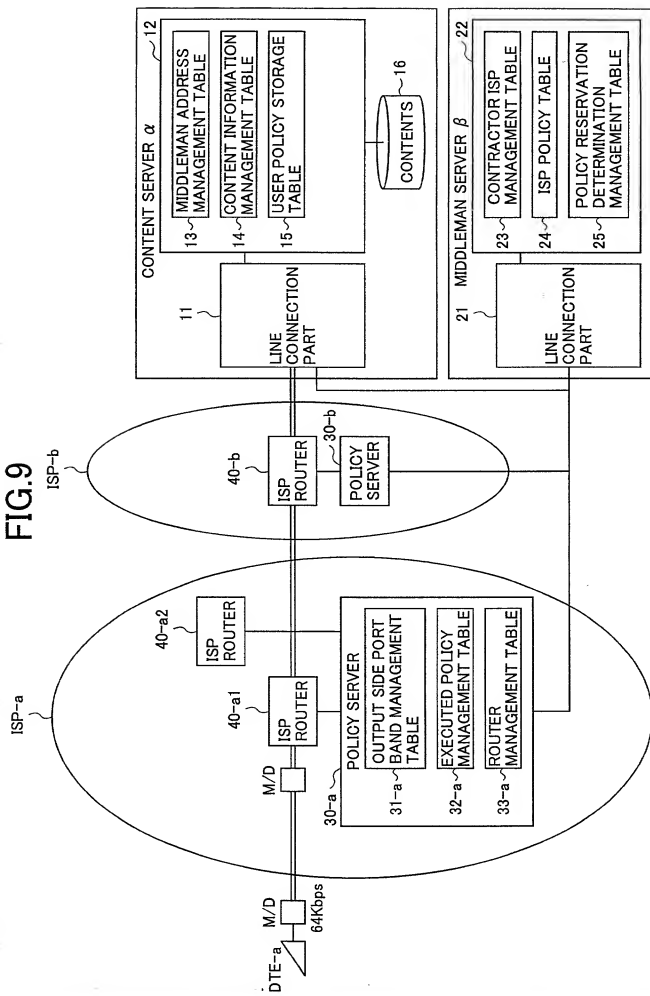
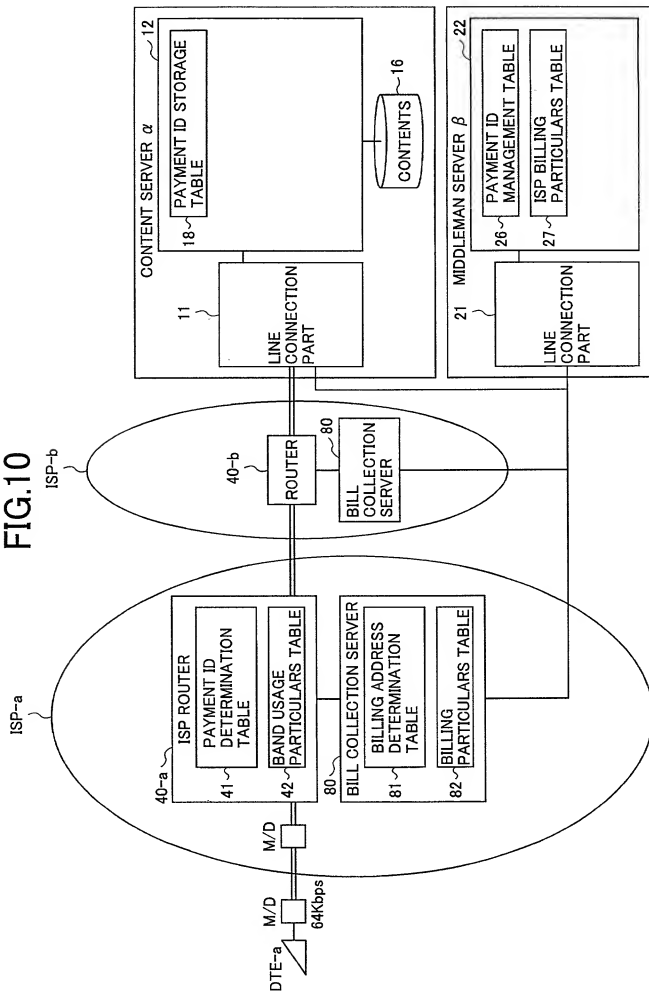


FIG. 10



PAYMENT ID
β 1

FIG.11A

PAYMENT ID	CONTENT SERVER IP ADDRESS
β 1	136.10.0.1
β 2	140.10.0.1

FIG.11B

AMOUNT BILLED (YEN)	PAYMENT ID	DESTINA- TION IP ADDRESS	DESTINA- TION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME	ISP SERVER IP ADDRESS
aaa	β 1	130.20.0.2	10	64K	2001/9/1 9:00	2001/9/1 11:00	134.40.0.2
ccc	β 1	130.10.0.2	30	64K	2001/9/1 10:00	2001/9/1 12:00	134.40.0.2

FIG.11C

FIG.12A

PAYMENT ID	MIDDLEMAN SERVER IP ADDRESS
β 1	138.10.0.1
β 2	138.10.0.1

FIG.12C

PAYMENT ID
β 1
β 2

FIG.12B

AMOUNT BILLED (YEN)	PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
aaa	β 1	130.20.0.2	10	64K	2001/9/1 9:00	2001/9/1 11:00
bbb	β 1	130.10.0.2	30	64K	2001/9/1 10:00	2001/9/1 12:00
ccc	β 1	132.20.0.2	20	64K	2001/9/1 9:00	2001/9/1 12:00

FIG.12D

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
β	130.20.0.2	10	64K	2001/9/1 9:00	2001/9/1 11:00
β	130.10.0.2	30	64K	2001/9/1 10:00	2001/9/1 12:00

FIG.13A

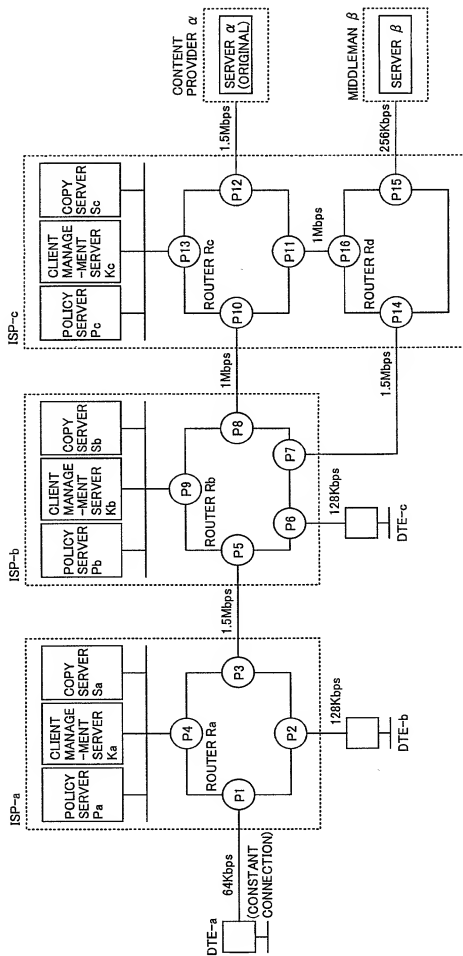


FIG.13B

TERMINAL/ SERVER	IP ADDRESS	ISP-a	PORT	IP ADDRESS	ISP-b	PORT	IP ADDRESS	ISP-c	PORT	IP ADDRESS
DTE-a	130.10.0.2	ROUTER Ra	P1	130.10.0.1	ROUTER Rb	P5	132.10.0.1	ROUTER Rc	P10	134.10.0.1
DTE-b	130.20.0.2		P2	130.20.0.1		P6	132.20.0.1		P11	134.20.0.1
DTE-c	132.30.0.2		P3	130.30.0.1		P7	132.30.0.1		P12	134.30.0.1
SERVER α	136.10.0.1		P4	130.40.0.1		P8	132.40.0.1		P13	134.40.0.1
SERVER β	138.10.0.1	VIRTUAL IP ADDRESS (Ra)	-	130.10.0.5	ROUTER Rd	P9	132.50.0.1	ROUTER Rd	P14	134.50.0.1
		SERVER Pa	-	130.40.0.3		-	132.10.0.5		P15	134.60.0.1
		SERVER Ka	-	130.40.0.4		-	132.50.0.3		P16	134.20.0.2
		SERVER Sa	-	130.40.0.2		-	132.50.0.4		-	134.10.0.5
					SERVER Sb	-	132.50.0.2	VIRTUAL IP ADDRESS (Rc)	-	134.50.0.5
								VIRTUAL IP ADDRESS (Rd)	-	134.40.0.3
								SERVER Pc	-	134.40.0.4
								SERVER Kc	-	134.40.0.4
								SERVER Sc	-	134.40.0.2

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)

FIG.14A

MIDDLEMAN SERVER IP ADDRESS
138.100.1

FIG.14B

CONTENT NAME	CAPACITY
CONTENT A	57.6M
CONTENT B	28.8M

FIG.14C

FIG.15A

NETWORK ADDRESS	POLICY SERVER IP ADDRESS	CLIENT MANAGEMENT SERVER IP ADDRESS
130.0.0.0/9	130.40.0.3	130.40.0.4
132.0.0.0/9	132.50.0.3	132.50.0.4
134.0.0.0/9	134.40.0.3	134.40.0.4

FIG.15B

ORDER RECEPTION NO.	POLICY SERVER IP ADDRESS	USER IP ADDRESS	CONTENT SERVER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS

FIG.15C

CONTENT SERVER IP ADDRESS	ORDER -ING NO.	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT

FIG.18A

ROUTER PORT IP ADDRESS	ROUTER VIRTUAL IP ADDRESS
130.10.0.1	130.10.0.5
130.20.0.1	
130.30.0.1	
130.40.0.1	

FIG.18B

ROUTER PORT IP ADDRESS	ROUTER VIRTUAL IP ADDRESS
132.10.0.1	132.10.0.5
132.20.0.1	
132.30.0.1	
132.40.0.1	
132.50.0.1	

FIG.18C

ROUTER PORT IP ADDRESS	ROUTER VIRTUAL IP ADDRESS
134.10.0.1	134.10.0.5
134.20.0.1	
134.30.0.1	
134.40.0.1	
134.50.0.1	134.50.0.5
134.60.0.1	
134.20.0.2	

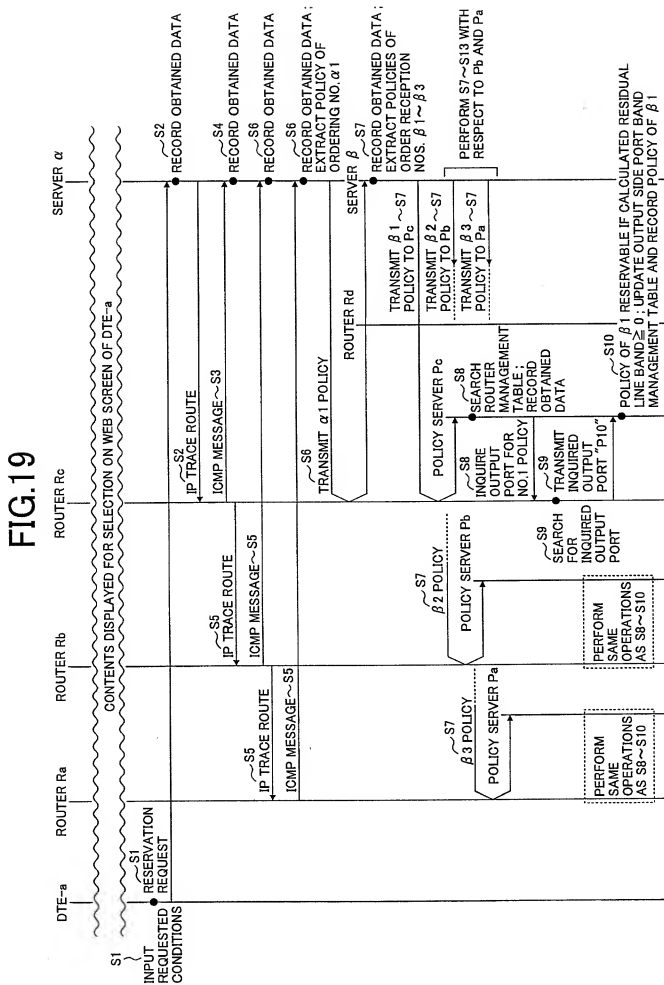


FIG.20

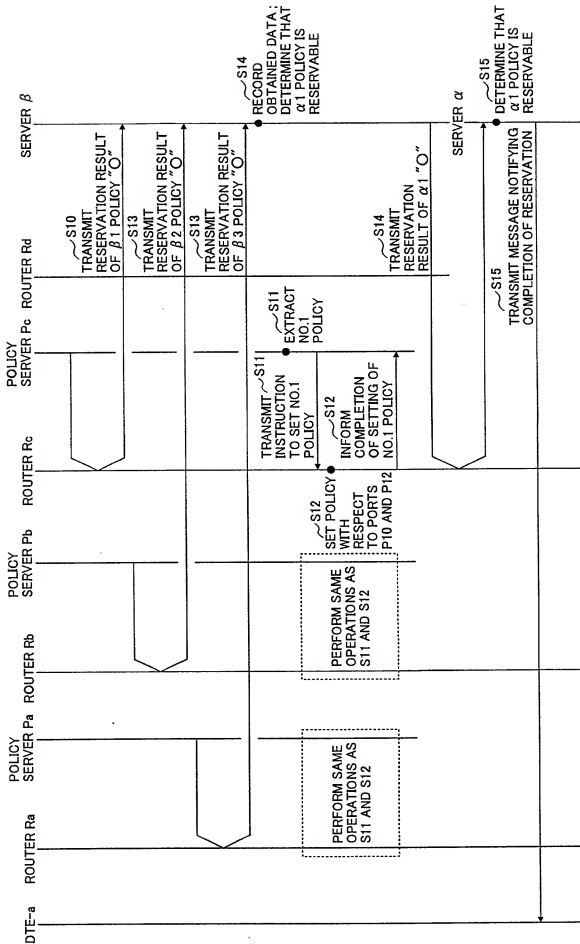


FIG.21

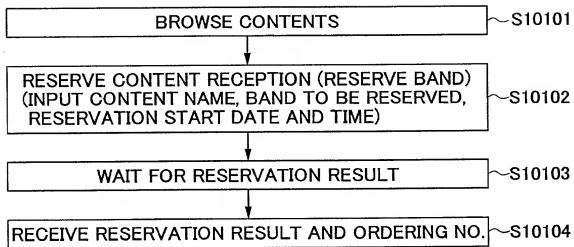
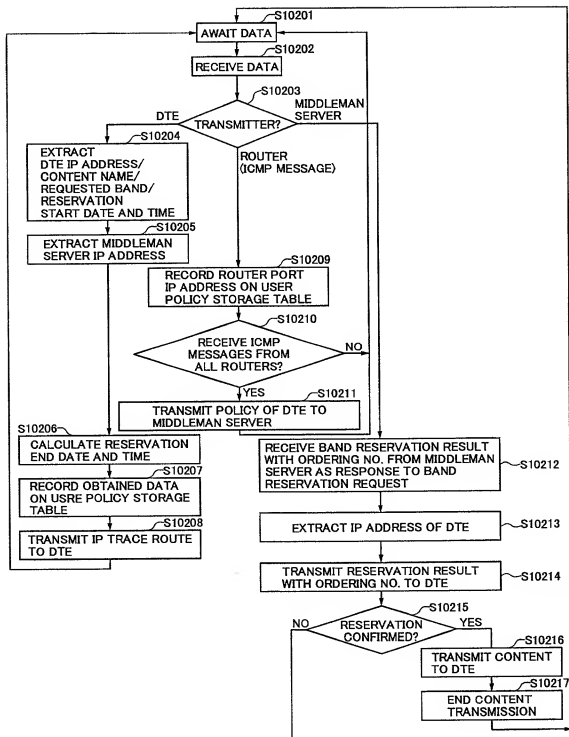


FIG.22



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FIG.23

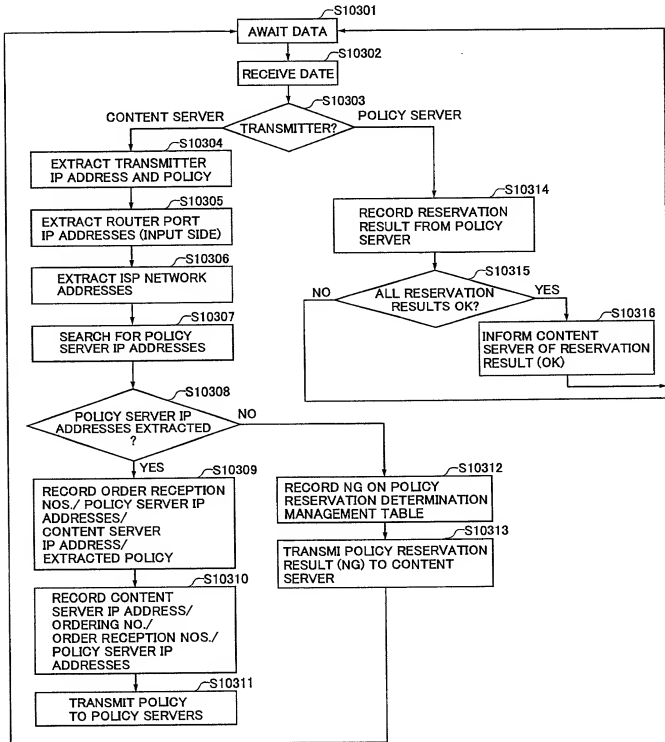
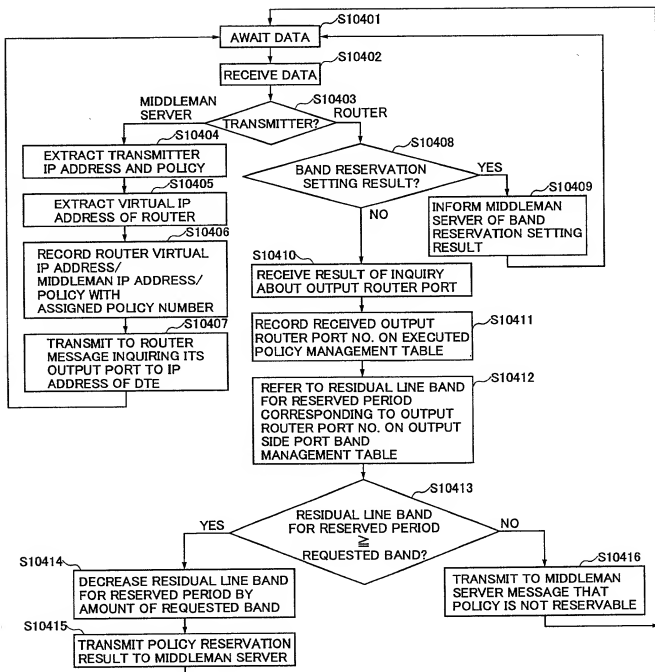


FIG.24



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FIG.25

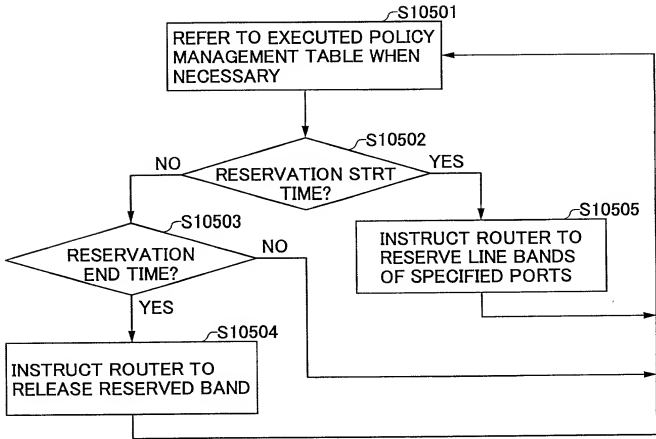
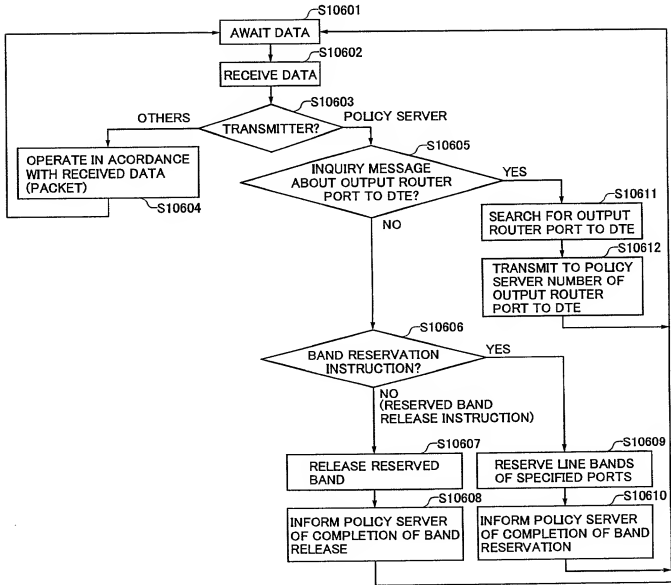


FIG.26



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DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA
136.10.0.1	130.10.0.2	(REQUESTED CONDITIONS)

FIG. 27A

MIDDLEMAN SERVER IP ADDRESS
138.10.0.1

FIG. 27B

CONTENT NAME	CAPACITY
CONTENT A	57.6M
CONTENT B	28.8M

FIG. 27C

$$\text{FIG. 27D} \left\{ \begin{array}{l} \text{(a) } 57.6 \text{ (Mbyte)} \times \frac{8 \text{ (bit)}}{64 \text{ (Kbps)}} = 7,200 \text{ (sec)} \\ \text{(b) "2001/9/1 10:00" + "7,200 (sec)"} \\ \text{(c) "2001/9/1 12:00"} \end{array} \right.$$

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2	64K	2001/9/1 10:00	2001/9/1 12:00	

FIG.27E

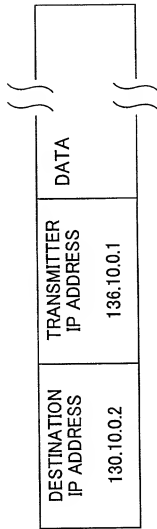


FIG.27F

FIG.28A

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA
136.10.0.1	134.30.0.1	

FIG.28B

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2	64K	2001/9/1 10:00	2001/9/1 12:00	134.30.0.1

FIG.28C

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA
136.10.0.1	132.40.0.1	

FIG.28D

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA
136.10.0.1	130.30.0.1	

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
$\alpha 1$	138.100.1	CONTENT A	130.100.2	64K	2001/9/1 10:00	2001/9/1 12:00	134.300.1
							132.400.1
							130.300.1

FIG. 29A

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
$\alpha 1$	138.100.1	CONTENT A	130.100.2	64K	2001/9/1 10:00	2001/9/1 12:00	134.300.1
							132.400.1
							130.300.1

FIG. 29B

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 136.100.1	DATA ($\alpha 1$ POLICY)
-------------------------------------	-------------------------------------	------------------------------

FIG. 29C

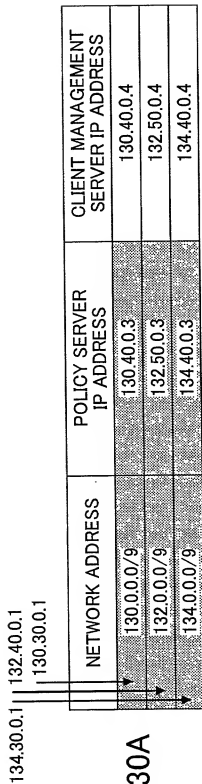


FIG.30A

FIG.30B

ORDER RECEPTION NO.	POLICY SERVER IP ADDRESS	USER IP ADDRESS	CONTENT SERVER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS
β 1	134.40.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	134.30.0.1
β 2	132.50.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	132.40.0.1
β 3	130.40.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	130.30.0.1

CONTENT SERVER IP ADDRESS	ORDER -ING NO.	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
136.10.0.1	α 1	β 1	134.40.0.3	
		β 2	132.50.0.3	
		β 3	130.40.0.3	

FIG.31A

FIG.31B

ORDER RECEPTION NO.	POLICY SERVER IP ADDRESS	USER IP ADDRESS	CONTENT SERVER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS
β 1	134.40.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	134.30.0.1
β 2	132.50.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	132.40.0.1
β 3	130.40.0.3	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	130.30.0.1

DESTINATION IP ADDRESS 134.40.0.3	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (β 1 POLICY FOR POLICY SERVER P _c)
---	---	--

FIG.31C

DESTINATION IP ADDRESS 132.50.0.3	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (β 2 POLICY FOR POLICY SERVER P _b)
---	---	--

FIG.31D

DESTINATION IP ADDRESS 130.40.0.3	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (β 3 POLICY FOR POLICY SERVER P _a)
---	---	--

FIG.31E

ROUTER PORT IP ADDRESS	ROUTER VIRTUAL IP ADDRESS
134.100.1	134.100.5
134.200.1	
134.300.1	
134.400.1	
134.500.1	134.500.5
134.600.1	
134.200.2	

FIG. 32A

FIG. 32B

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.100.2	136.100.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.100.1	β 1	134.100.5	

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (INQUIRY ABOUT ROUTER OUTPUT PORT TO USER IP ADDRESS OF NO.1 POLICY)
134.100.5	134.40.0.3	

FIG. 32C

FIG.33A

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (OUTPUT PORT P10 TO USER IP ADDRESS OF NO.1 POLICY)
134.40.0.3	134.10.0.5	

FIG.33B

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.10.0.1	β 1	134.100.5	P10

FIG.33C

$$\begin{aligned}\text{RESIDUAL LINE BAND} &= 1\text{Mbps} - 64\text{Kbps} \\ &= 0.936\text{Mbps} > 0\end{aligned}$$

ROUTER	PORT NO.	LINE BAND FOR USE (bps)	LINE BAND LEFT FOR EACH RESERVATION PERIOD (bps)											
			0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Rc	P10	1M	1M	1M	1M	1M	1M	0.936M	1M	1M	1M	1M	1M	1M
Rc	P11	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
Rd	P14	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M
Rd	P16	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M

FIG.33D

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 134.40.0.3	DATA (RESERVATION RESULT OF β 1 POLICY "O")
-------------------------------------	--------------------------------------	--

FIG.33E

FIG.34A

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.10.0.1	β 1	134.10.0.5	P10

FIG.34B

DESTINATION IP ADDRESS 134.10.0.5	TRANSMITTER IP ADDRESS 134.40.0.3	DATA (INSTRUCTION TO SET NO.1 POLICY)
--------------------------------------	--------------------------------------	--

FIG.34C

DESTINATION IP ADDRESS 134.40.0.3	TRANSMITTER IP ADDRESS 134.10.0.5	DATA (COMPLETION OF SETTING OF NO.1 POLICY)
--------------------------------------	--------------------------------------	--

FIG.34D

DESTINATION IP ADDRESS 138.10.0.1	TRANSMITTER IP ADDRESS 132.50.0.3	DATA (RESERVATION RESULT OF β 2 POLICY "O")
--------------------------------------	--------------------------------------	--

FIG.34E

DESTINATION IP ADDRESS 138.10.0.1	TRANSMITTER IP ADDRESS 130.40.0.3	DATA (RESERVATION RESULT OF β 3 POLICY "O")
--------------------------------------	--------------------------------------	--

CONTENT SERVER IP ADDRESS	ORDER -ING NO.	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
136.10.0.1	α 1	β 1	134.40.0.3	O
		β 2	132.50.0.3	O
		β 3	130.40.0.3	O

FIG. 35A

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (GENERAL DETERMINATION RESULT OF α 1 POLICY "O")
136.10.0.1	138.10.0.1	

FIG. 35B

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (COMPLETION OF RESERVATION)
130.10.0.2	136.10.0.1	

FIG. 35C

FIG. 36

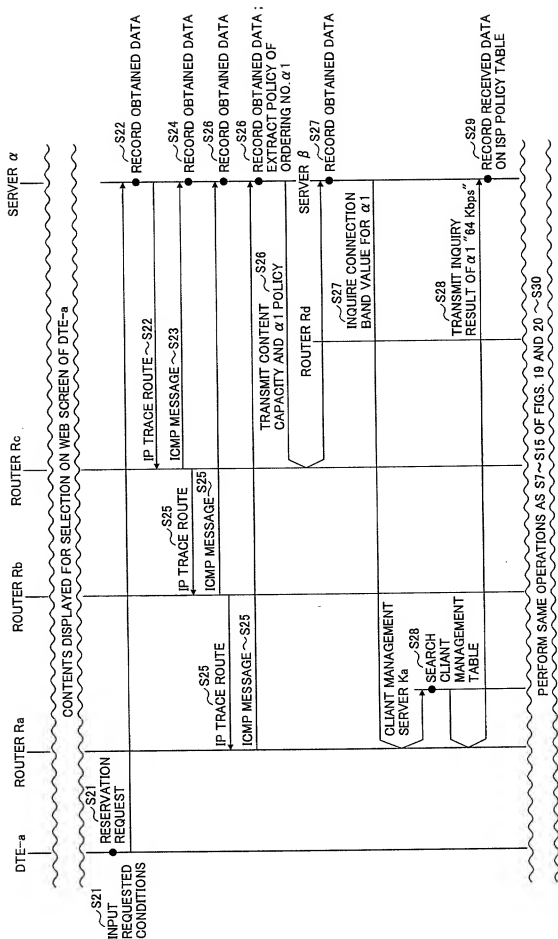


FIG.37

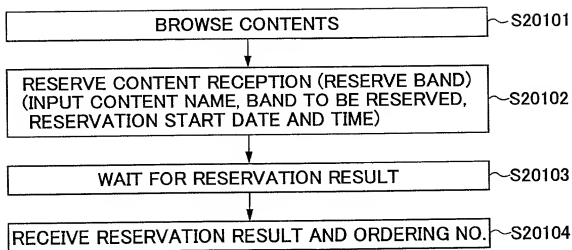


FIG.38

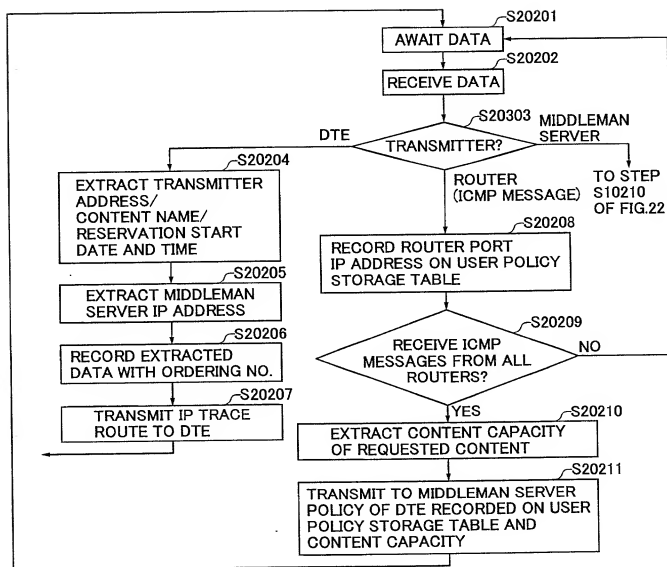


FIG.39

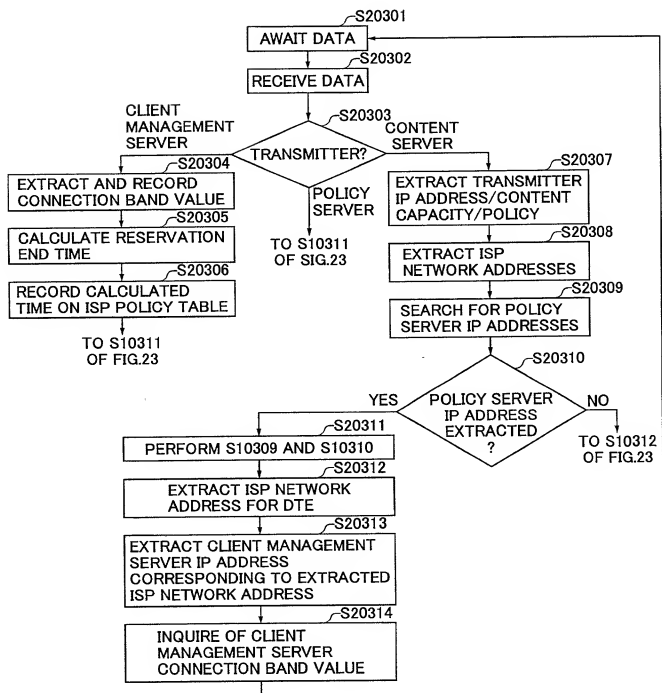


FIG.40

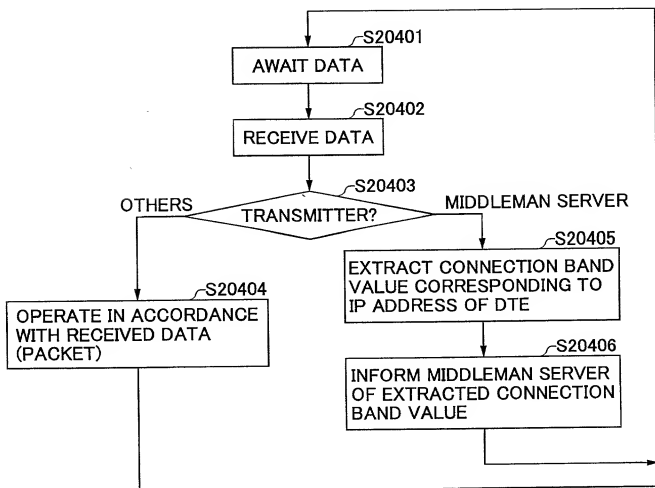


FIG.41A

USER IP ADDRESS	CONNECTION BAND (bps)
130.10.0.2	64K
130.20.0.2	128K
130.10.0.3	

FIG.41B

USER IP ADDRESS	CONNECTION BAND (bps)
132.30.0.2	128K

FIG.41C

USER IP ADDRESS	CONNECTION BAND (bps)

FIG.42A

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (REQUESTED CONDITIONS)
136.100.0.1	130.100.0.2	

FIG.42B

MIDDLEMAN SERVER IP ADDRESS
138.100.0.1

FIG.42C

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.100.0.1	CONTENT A	130.100.0.2		2001/9/1 10:00		

FIG.42D

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA
130.100.0.2	136.100.0.1	



FIG.43A

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2		2001/9/1 10:00		134.30.0.1

FIG.43B

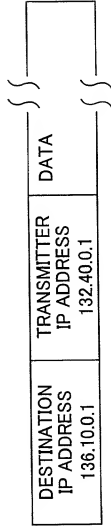


FIG.43C



FIG.43D

FIG. 44A

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2		2000/9/1 10:00		134.30.0.1
							132.40.0.1
							130.30.0.1

FIG. 44B

CONTENT NAME	CAPACITY (byte)
CONTENT A	57.6M
CONTENT B	28.8M

FIG.44C

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
$\alpha 1$	138.10.0.1	CONTENT A	130.10.0.2		2000/9/1 10:00		134.30.0.1
							132.40.0.1
							130.30.0.1

FIG.44D

DESTINATION IP ADDRESS 138.10.0.1	TRANSMITTER IP ADDRESS 136.10.0.1	DATA (CONTENT CAPACITY, $\alpha 1$ POLICY)
---	---	---

FIG.45A

132.40.0.1				
134.300.0.1				
	130.0.0.9	130.40.0.3	130.40.0.4	
	132.0.0.9	132.50.0.3	132.50.0.4	
	134.0.0.9	134.40.0.3	134.40.0.4	

FIG.45B

ORDER RECEPTION NO.	POLICY SERVER IP ADDRESS	USER IP ADDRESS	CONTENT SERVER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS
β 1	134.40.0.3	130.10.0.2	136.10.0.1		2000/9/1 10:00		134.300.0.1
β 2	132.50.0.3	130.10.0.2	136.10.0.1		2000/9/1 10:00		132.40.0.1
β 3	130.40.0.3	130.10.0.2	136.10.0.1		2000/9/1 10:00		130.300.0.1

FIG.45C

CONTENT SERVER IP ADDRESS	ORDERING NO.	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
136.100.1	$\alpha 1$	$\beta 1$	134.40.0.3	
		$\beta 2$	132.50.0.3	
		$\beta 3$	130.40.0.3	

FIG.45D

NETWORK ADDRESS	POLICY SERVER IP ADDRESS	CLIENT MANAGEMENT SERVER IP ADDRESS
130.0.0.0/9	130.40.0.3	130.40.0.4
132.0.0.0/9	132.50.0.3	132.50.0.4
134.0.0.0/9	134.40.0.3	134.40.0.4

FIG.45E

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (ORDERING NO., USER IP ADDRESS, INQUIRY ABOUT CONNECTION BAND)
130.40.0.4	138.100.1	

FIG.46A

USER IP ADDRESS	CONNECTION BAND (bps)
130.100.2	64K
130.200.2	128K
130.100.3	

FIG.46B

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 130.400.4	DATA (ORDERING NO., CONNECTION BAND "64Kbps")
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$$\left\{ \begin{array}{l} \text{(a) } 57.6(\text{Mbyte}) \times \frac{8 \text{ (bit)}}{64(\text{Kbps})} = 7,200 \text{ (sec)} \\ \text{(b) "2001/9/1 10:00" + "7,200(sec)"} \\ \text{(c) "2001/9/1 12:00"} \end{array} \right.$$

FIG.46C

FIG.46D

ORDER RECEPTION NO.	POLICY SERVER IP ADDRESS	USER IP ADDRESS	CONTENT SERVER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS
$\beta 1$	134.40.0.3	130.100.2	136.100.1	64K	2000/9/1 10:00	2000/9/1 12:00	134.30.0.1
$\beta 2$	132.50.0.3	130.100.2	136.100.1	64K	2000/9/1 10:00	2000/9/1 12:00	132.40.0.1
$\beta 3$	130.40.0.3	130.100.2	136.100.1	64K	2000/9/1 10:00	2000/9/1 12:00	130.30.0.1

FIG.48

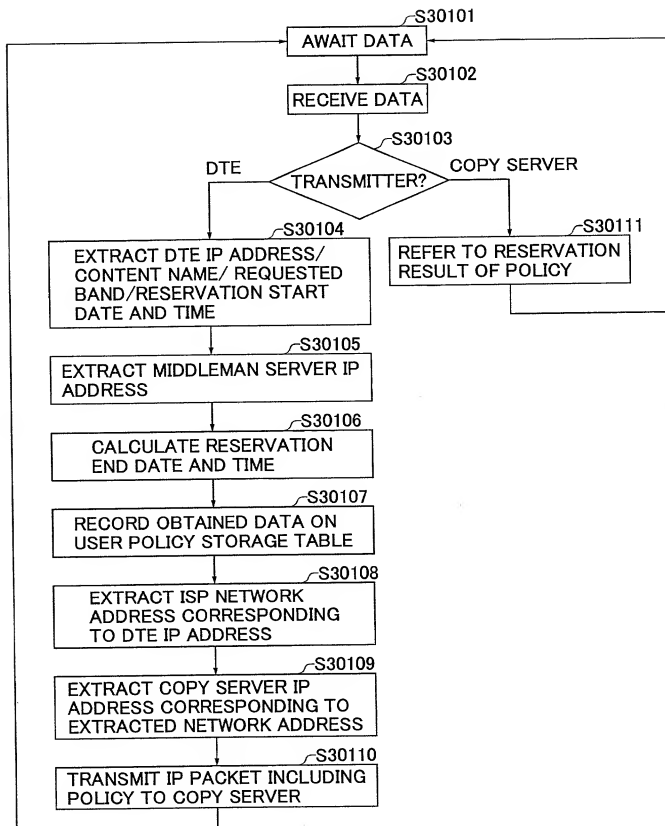


FIG.49

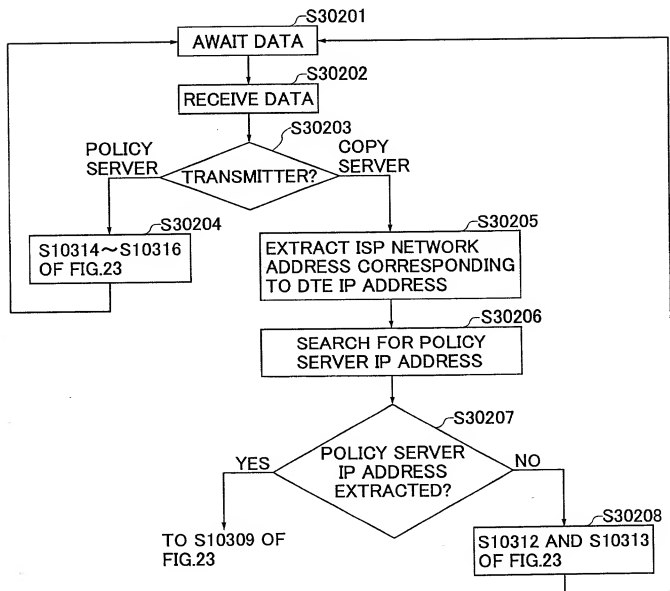


FIG.50

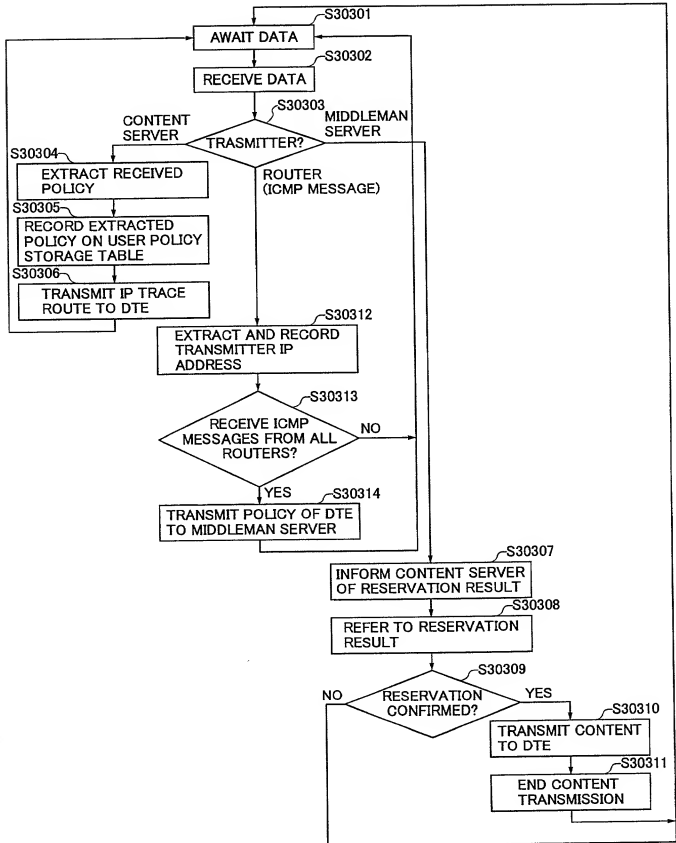


FIG. 51A

NETWORK ADDRESS	COPY SERVER IP ADDRESS
130.0.0.0/9	130.40.0.2
132.0.0.0/9	132.50.0.2
134.0.0.0/9	134.40.0.2

FIG. 51B

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)

FIG. 52

DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	DATA (REQUESTED CONDITIONS)
136.10.0.1	130.10.0.2	

FIG. 53A

MIDDLEMAN SERVER IP ADDRESS
138.10.0.1

FIG. 53B

CONTENT NAME	CAPACITY (byte)
CONTENT A	57.6M
CONTENT B	28.8M

FIG. 53C

$$\left\{ \begin{array}{l} \text{(a) } 57.6(\text{Mbyte}) \times \frac{8 \text{ (bit)}}{64(\text{Kbps})} = 7,200 \text{ (sec)} \\ \text{(b) "2001/9/1 10:00" + "7,200(sec)"} \\ \text{(c) "2001/9/1 12:00"} \end{array} \right.$$

FIG.53D

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
$\alpha 1$	138.10.0.1	CONTENT A	130.10.0.2	64K	2001/9/1 10:00	2001/9/1 12:00	

FIG.53E

NETWORK ADDRESS	COPY SERVER IP ADDRESS
130.0.0.9	130.40.0.2
132.0.0.9	132.50.0.2
134.0.0.9	134.40.0.2

FIG.53F

DESTINATION IP ADDRESS 130.40.0.2	TRANSMITTER IP ADDRESS 136.10.0.1	DATA ($\alpha 1$ POLICY)
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FIG.54A

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
01	138.100.1	CONTENT A	130.100.2	64K	2001/9/1 10:00	2001/9/1 12:00	

FIG.54B

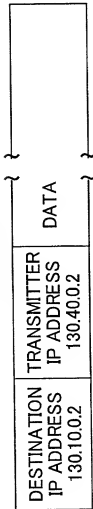


FIG.54C

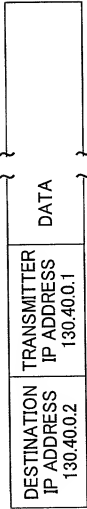


FIG.54D

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
$\alpha 1$	138.100.1	CONTENT A	130.100.2	64K	2001/9/1 10:00	2001/9/1 12:00	130.40.0.1

FIG.54E

DESTINATION IP ADDRESS 136.100.1	TRANSMITTER IP ADDRESS 130.40.0.4	DATA (COMPLETION OF $\alpha 1$ POLICY RESERVATION)
--	---	---

FIG. 55

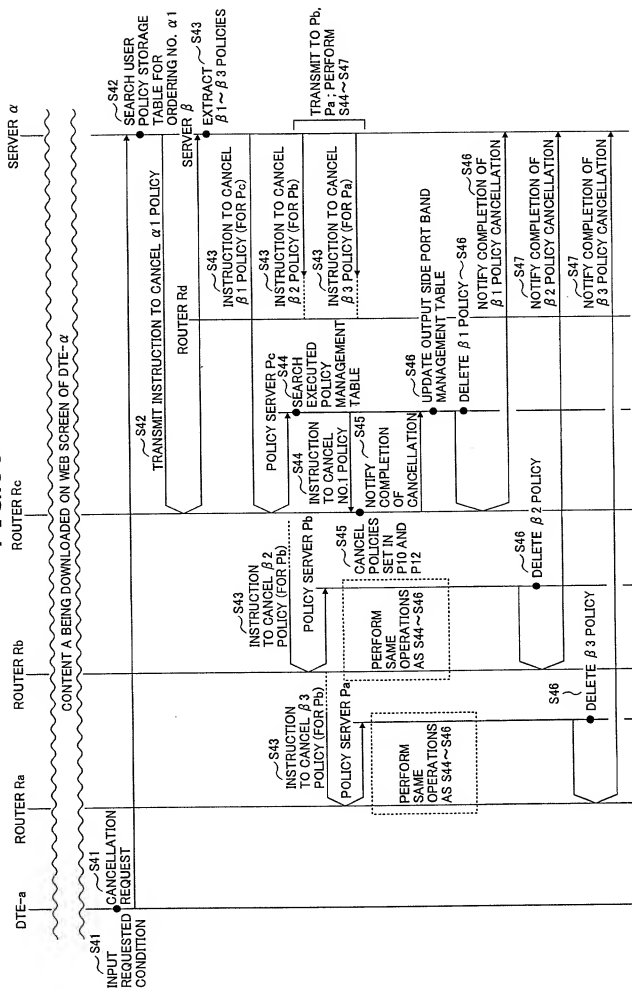


FIG.56

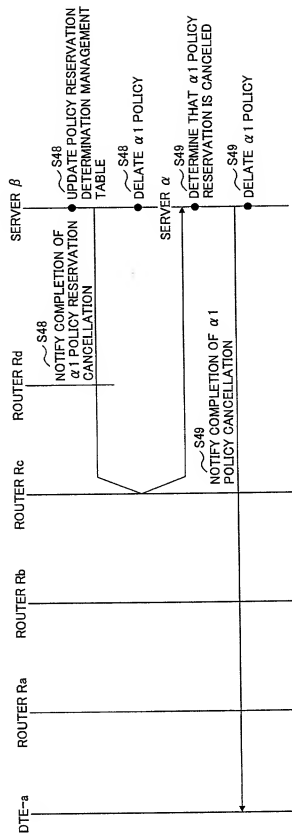
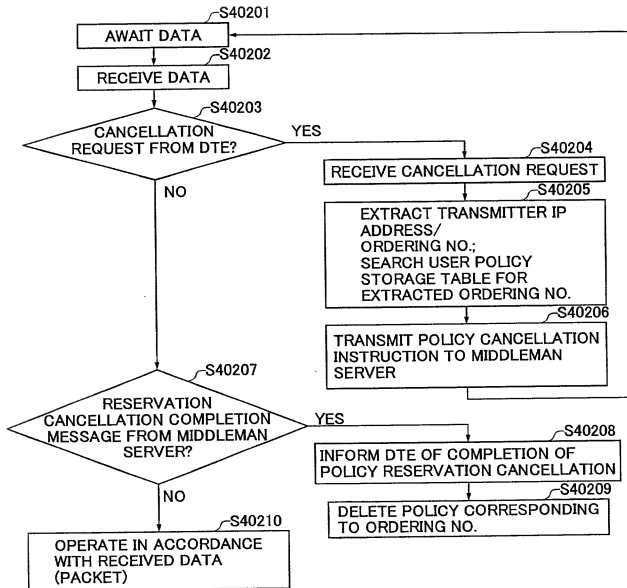


FIG.58



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FIG.59

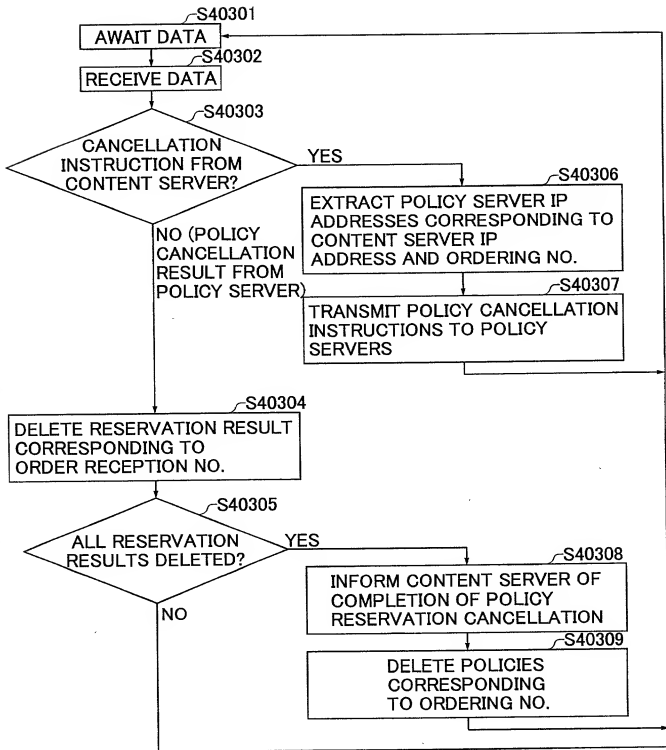
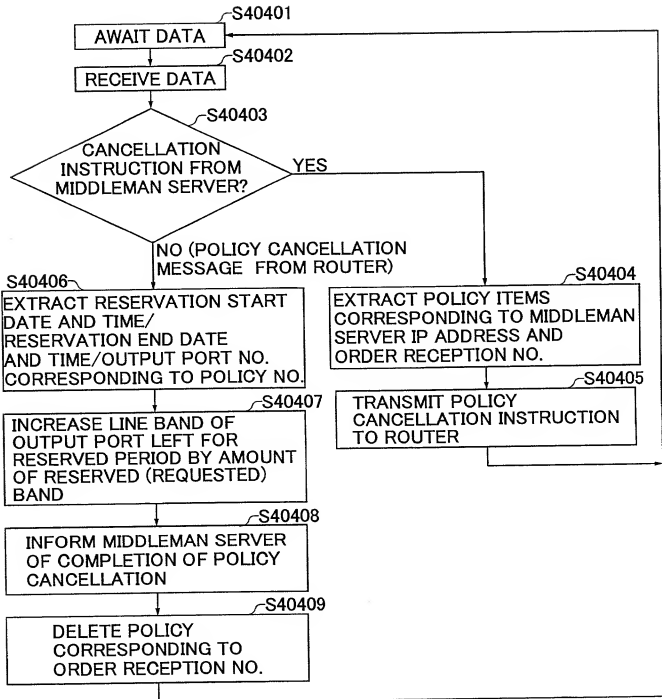


FIG.60



ROUTER	PORT NO.	LINE BAND FOR USE (bps)	LINE BAND LEFT FOR EACH RESERVATION PERIOD (bps)											
			0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Ra	P1	—	—	—	—	—	—	—	—	—	—	—	—	—
Ra	P2	—	—	—	—	—	—	—	—	—	—	—	—	—

FIG. 62A

ROUTER	PORT NO.	LINE BAND FOR USE (bps)	LINE BAND LEFT FOR EACH RESERVATION PERIOD (bps)											
			0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Rb	P5	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.308M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M
Rb	P6	—	—	—	—	—	—	—	—	—	—	—	—	—

FIG. 62B

ROUTER	PORT NO.	LINE BAND FOR USE (bps)	LINE BAND LEFT FOR EACH RESERVATION PERIOD (bps)											
			0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24
Rc	P10	1M	1M	1M	1M	1M	1M	0.936M	1M	1M	1M	1M	1M	1M
Rc	P11	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M
Rd	P14	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M	1.5M
Rd	P16	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M	1M

FIG. 62C

FIG.63A

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.20.0.2	132.30.0.2	128K	2001/9/1 10:00	2001/9/1 12:00			130.10.0.5	P2
2	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.10.0.1	β 3	130.10.0.5	P1

FIG.63B

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	132.30.0.2	130.20.0.2	128K	2001/9/1 10:00	2001/9/1 12:00			132.10.0.5	P6
2	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.10.0.1	β 2	132.10.0.5	P5

FIG.63C

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.10.0.2	136.10.0.1	64K	2001/9/1 10:00	2001/9/1 12:00	138.10.0.1	β 1	134.10.0.5	P10

FIG.64A

DESTINATION IP ADDRESS 136.10.0.1	TRANSMITTER IP ADDRESS 130.10.0.2	DATA (CANCELLATION OF α 1 POLICY)
---	---	---

FIG.64B

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT A	130.10.0.2	64K	2000/9/1 10:00	2001/9/1 12:00	134.30.0.1
							132.40.0.1
							130.30.0.1

FIG.64C

DESTINATION IP ADDRESS 138.10.0.1	TRANSMITTER IP ADDRESS 136.10.0.1	DATA (CANCELLATION OF α 1 POLICY)
---	---	---

FIG. 65A

CONTENT SERVER IP ADDRESS	ORDERING NO.	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
136.100.0.1	α 1	β 1	134.400.0.3	○
		β 2	132.500.0.3	○
		β 3	130.400.0.3	○

FIG. 65B

DESTINATION IP ADDRESS 134.400.0.3	TRANSMITTER IP ADDRESS 138.100.0.1	DATA (INSTRUCTION TO CANCEL β 1 POLICY FOR POLICY SERVER P _c)
--	--	---

FIG.65C

DESTINATION IP ADDRESS 132.50.0.3	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (INSTRUCTION TO CANCEL β 2 POLICY FOR POLICY SERVER Pb)
---	---	--

FIG.65D

DESTINATION IP ADDRESS 130.40.0.3	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (INSTRUCTION TO CANCEL β 3 POLICY FOR POLICY SERVER Pa)
---	---	--

FIG.66A

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	130.10.0.2	136.10.0.1	64K	2001/9/1 1000	2001/9/1 1200	138.10.0.1	β 1	134.10.0.5	PT0

FIG.66B

DESTINATION IP ADDRESS 134.10.0.5	TRANSMITTER IP ADDRESS 134.40.0.3	DATA (INSTRUCTION TO CANCEL NO.1 POLICY)
--------------------------------------	--------------------------------------	---

FIG.66C

DESTINATION IP ADDRESS 134.40.0.3	TRANSMITTER IP ADDRESS 134.10.0.5	DATA (COMPLETION OF NO.1 POLICY CANCELLATION)
--------------------------------------	--------------------------------------	--

FIG.67D

DESTINATION IP ADDRESS 138.10.0.1	TRANSMITTER IP ADDRESS 134.40.0.3	DATA (COMPLETION OF β 1 POLICY RESERVATION CANCELLATION)
---	---	--

FIG.67E

POLICY NO.	DESTINATION IP ADDRESS	TRANSMITTER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	MIDDLEMAN SERVER IP ADDRESS	ORDER RECEPTION NO.	ROUTER VIRTUAL IP ADDRESS	OUTPUT PORT NO.
1	198.168.2	198.168.1	64K	2001/9/1 1000	2001/9/1 1200	198.168.1	β 1	198.168.5	P16

FIG. 68A

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 132.50.0.3	DATA (COMPLETION OF β 2 POLICY RESERVATION CANCELLATION)
--	---	--

FIG. 68B

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 130.40.0.3	DATA (COMPLETION OF β 3 POLICY RESERVATION CANCELLATION)
--	---	--

FIG. 68C

ORDERING NO.	CONTENT SERVER IP ADDRESS	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
α 1	136.100.1	β 1	134.40.0.3	
		β 2	132.50.0.3	
		β 3	130.40.0.3	

FIG.68D

DESTINATION IP ADDRESS 136.10.0.1	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (COMPLETION OF α 1 POLICY RESERVATION CANCELLATION)
---	---	---

FIG.68E

ORDERING NO.	CONTENT SERVER IP ADDRESS	ORDER RECEPTION NUMBER	POLICY SERVER IP ADDRESS	RESERVATION RESULT
α 1	136.10.0.1	β 1	134.40.0.3	
		β 2	132.50.0.3	
		β 3	130.40.0.3	

FIG.69A

DESTINATION IP ADDRESS 130.100.2	TRANSMITTER IP ADDRESS 136.100.1	DATA (COMPLETION OF α 1 POLICY CANCELLATION)
--	--	--

FIG.69B

ORDERING NO.	MIDDLEMAN SERVER IP ADDRESS	CONTENT NAME	USER IP ADDRESS	REQUESTED BAND (bps)	RESERVATION START DATE AND TIME	RESERVATION END DATE AND TIME	ROUTER PORT IP ADDRESS (TRACE ROUTE INPUT SIDE)
α 1	138.10.0.1	CONTENT-A	130.10.0.2	64K			134.30.0.1
							132.40.0.1
							130.30.0.1

FIG. 70A

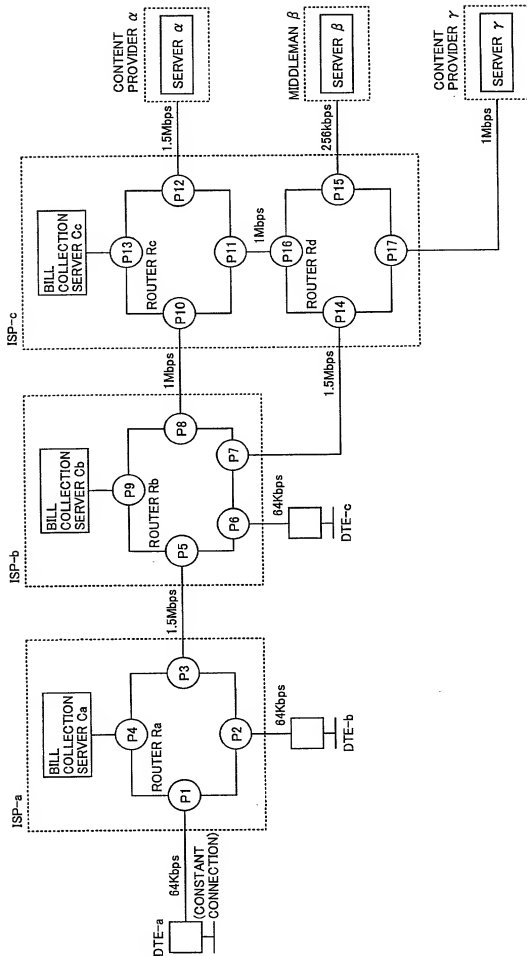


FIG.70B

TERMINAL/ SERVER	IP ADDRESS	ISP--a	PORT	IP ADDRESS	ISP--b	PORT	IP ADDRESS	ISP--c	PORT	IP ADDRESS
DTE-a	130.100.2	ROUTER Ra	P1	130.100.1	ROUTER Rb	P5	132.100.1	ROUTER Rc	P10	134.100.1
DTE-b	130.200.2		P2	130.200.1		P6	132.200.1		P11	134.200.1
DTE-c	132.200.2		P3	130.300.1		P7	132.300.1		P12	134.300.1
SERVER α	136.100.1		P4	130.400.1		P8	132.400.1		P13	134.400.1
SERVER β	138.100.1	SERVER Ca	-	130.400.2	SERVER Cb	P9	132.500.1	ROUTER Rd	P14	134.500.1
SERVER γ	140.100.1					-	132.500.2		P15	134.600.1
									P16	134.200.2
								SERVER Cc	P17	134.700.2
									-	134.400.2

FIG. 71

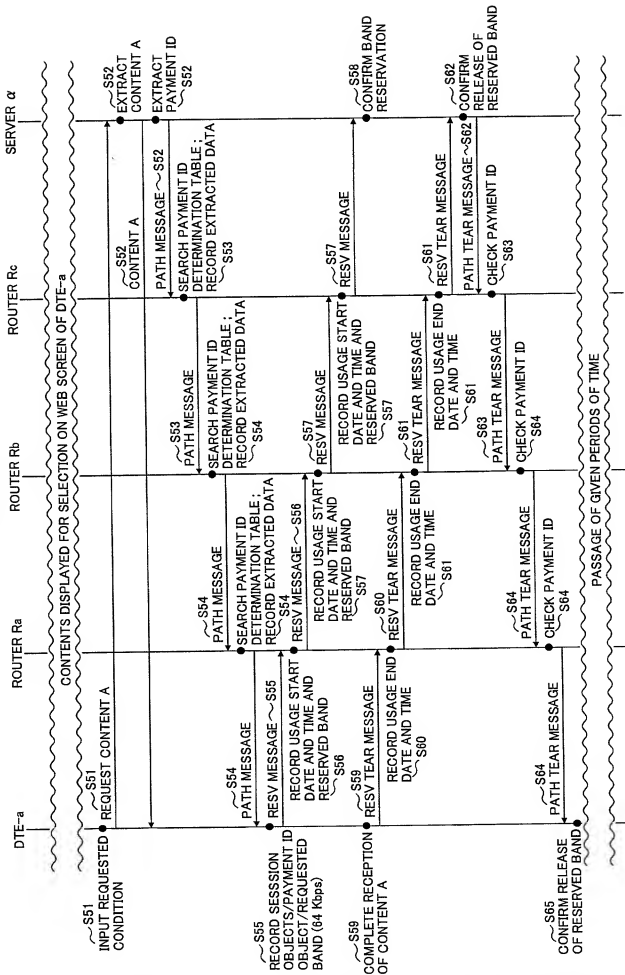


FIG. 72

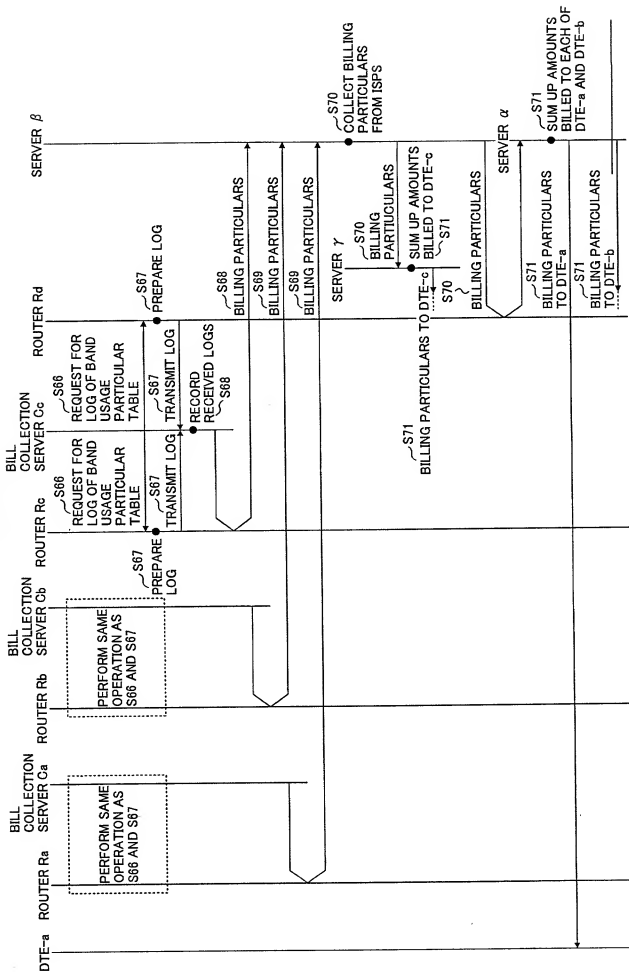


FIG.73

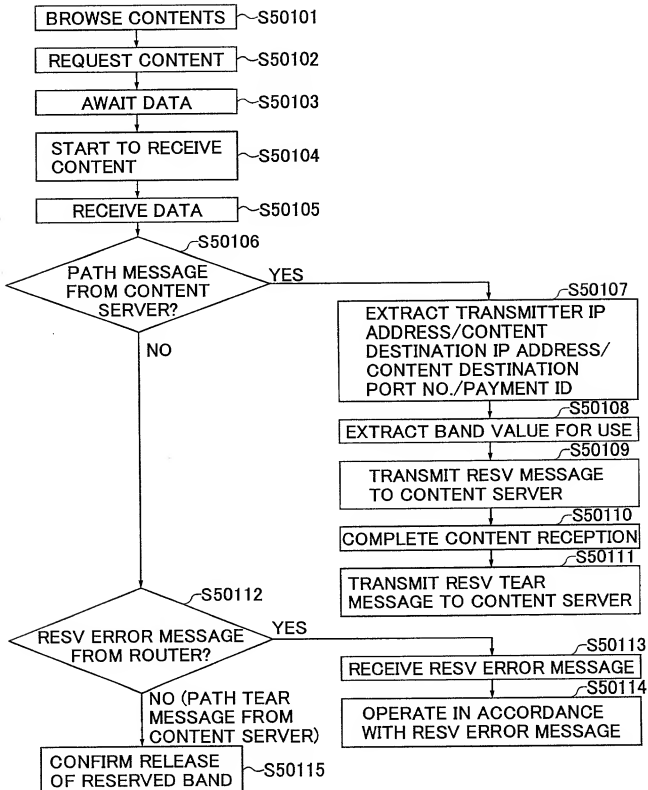


FIG.74

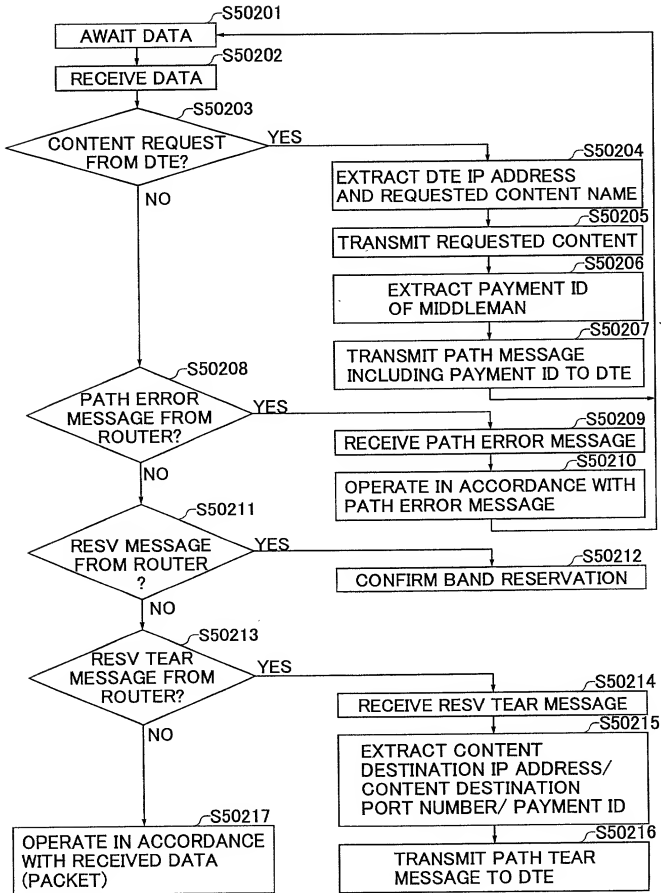
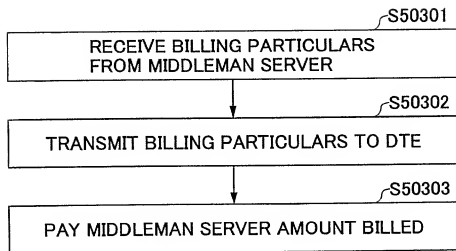


FIG.75



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FIG.77

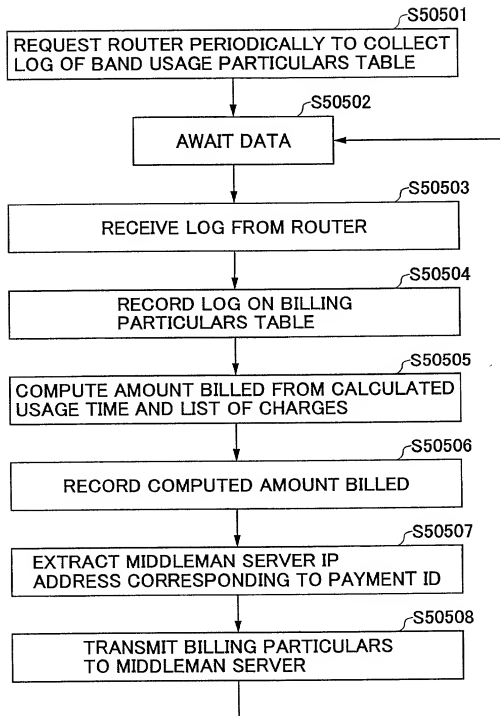


FIG.78

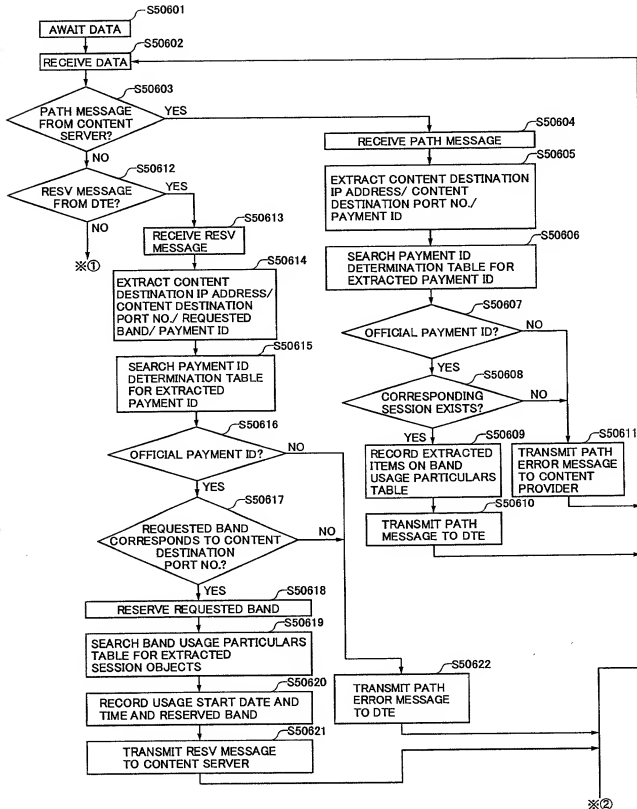


FIG.79

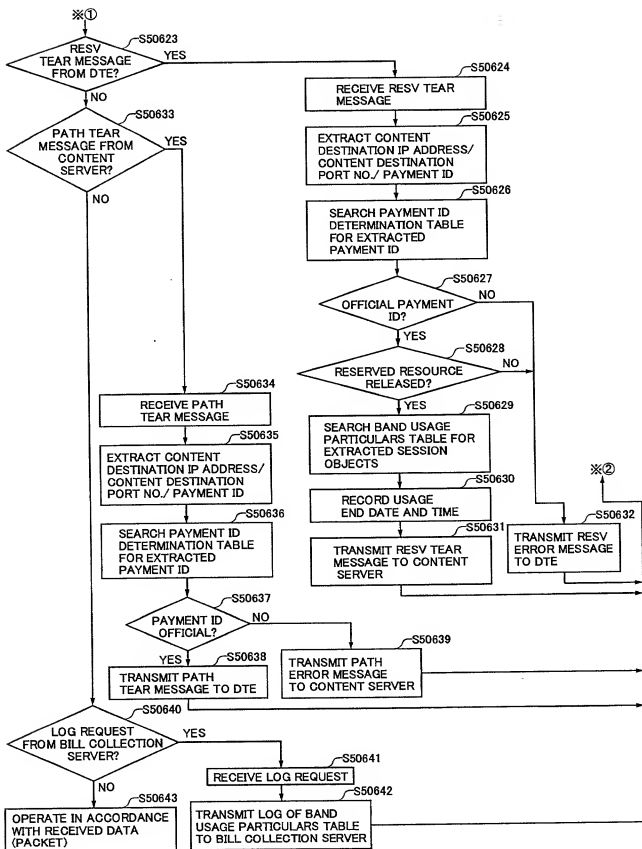


FIG. 80A

PAYMENT ID
$\beta 1$

FIG. 80B

PAYMENT ID
$\beta 2$

FIG. 81A

PAYMENT ID	CONTENT SERVER IP ADDRESS
$\beta 1$	136.10.0.1
$\beta 2$	140.10.0.1

FIG. 81B

AMOUNT BILLED (YEN)	PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME	ISP SERVER IP ADDRESS

FIG.82A

PAYMENT ID	MIDDLEMAN SERVER IP ADDRESS
β 1	138.10.0.1
β 2	138.10.0.1

FIG.82B

AMOUNT BILLED (YEN)	PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME

FIG.83A

PAYMENT ID
$\beta 1$
$\beta 2$

FIG.83B

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
$\beta 1$	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00

FIG.83C

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
$\beta 1$	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00
$\beta 2$	132.20.0.2	P6	64K	2001/9/1 9:00	2001/9/1 12:00

FIG.83D

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
$\beta 1$	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00

FIG.83E

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
$\beta 2$	132.20.0.2	P6	64K	2001/9/1 9:00	2001/9/1 12:00

FIG. 84A

DESTINATION IP ADDRESS 136.100.1	TRANSMITTER IP ADDRESS 130.100.2	DATA (REQUESTED CONDITION)
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FIG. 84B

DESTINATION IP ADDRESS 130.100.2	TRANSMITTER IP ADDRESS 136.100.1	DATA (CONTENT A)
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FIG.84C

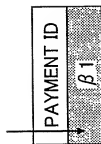


FIG.84D



FIG.85A

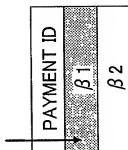


FIG.85B

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
β 1	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00
β 1	130.10.0.2	P1			

FIG.85C

DESTINATION IP ADDRESS 130.100.0.2	TRANSMITTER IP ADDRESS 134.100.0.1	CONTENT DESTINATION IP ADDRESS 130.10.0.2	CONTENT DESTINATION PORT NO. P1	PAYMENT ID β 1
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FIG.86A



FIG.86B

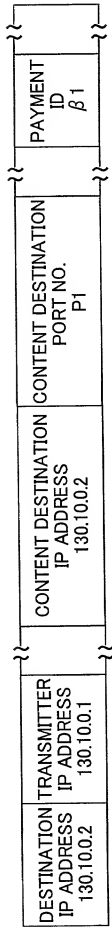


FIG.87

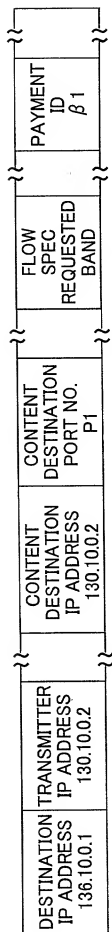


FIG.88A

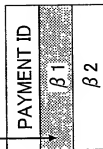


FIG.88B

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
$\beta 1$	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00
$\beta 1$	130.10.0.2	P1	64K	2001/9/1 10:00	

FIG.88C

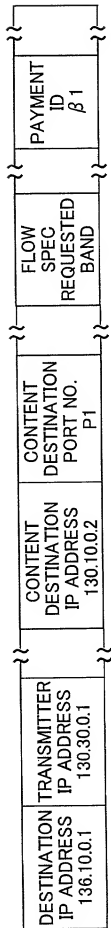


FIG. 89A

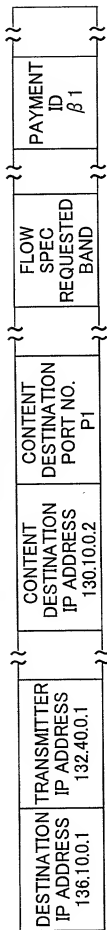


FIG. 89B

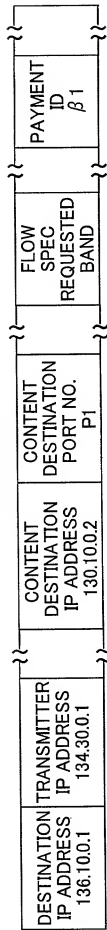


FIG. 89C



FIG. 90A

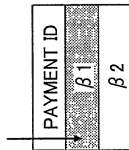


FIG. 90B

PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
$\beta 1$	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00
$\beta 1$	130.10.0.2	P1	64K	2001/9/1 10:00	2001/9/1 12:00

FIG. 90C

DESTINATION IP ADDRESS 136.100.1	TRANSMITTER IP ADDRESS 130.300.1	CONTENT DESTINATION IP ADDRESS 130.100.2	CONTENT DESTINATION PORT NO. P1	PAYMENT ID $\beta 1$
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FIG. 91A

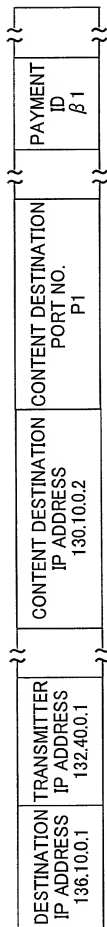


FIG. 91B



FIG. 91C



FIG.92A

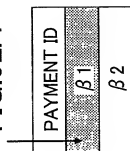


FIG.92B

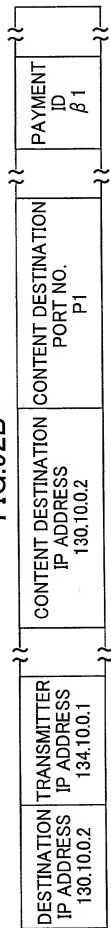


FIG.92C

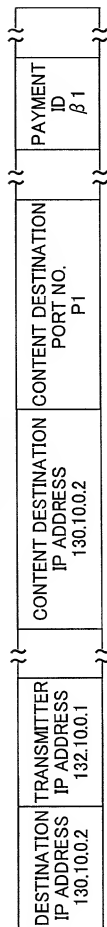


FIG.92D



FIG.93A

DESTINATION IP ADDRESS 134.40.0.1	TRANSMITTER IP ADDRESS 134.40.0.2	DATA (REQUEST FOR LOG OF BAND USAGE PARTICULARS TABLE)
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FIG.93B

DESTINATION IP ADDRESS 134.20.0.2	TRANSMITTER IP ADDRESS 134.40.0.2	DATA (REQUEST FOR LOG OF BAND USAGE PARTICULARS TABLE)
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FIG. 93C

DESTINATION IP ADDRESS 134.40.0.2	TRANSMITTER IP ADDRESS 134.40.0.1	DATA (LOG OF BAND USAGE PARTICULARS TABLE)
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FIG. 93D

DESTINATION IP ADDRESS 134.40.0.2	TRANSMITTER IP ADDRESS 134.20.0.2	DATA (LOG OF BAND USAGE PARTICULARS TABLE)
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FIG.94A

AMOUNT BILLED (YEN)	PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME
aaa	$\beta 1$	130.20.0.2	P2	64K	2001/9/1 9:00	2001/9/1 11:00
bbb	$\beta 1$	130.10.0.2	P1	64K	2001/9/1 10:00	2001/9/1 12:00
ccc	$\beta 2$	132.20.0.2	P6	64K	2001/9/1 9:00	2001/9/1 12:00

FIG.94B

PAYMENT ID	MIDDLEMEN SERVER IP ADDRESS
$\beta 1$	138.10.0.1
$\beta 2$	138.10.0.1

FIG.94C

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 134.40.0.2	DATA (BILLING PARTICULARS)
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FIG.94D

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 132.50.0.2	DATA (BILLING PARTICULARS)
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FIG.94E

DESTINATION IP ADDRESS 138.100.1	TRANSMITTER IP ADDRESS 130.40.0.2	DATA (BILLING PARTICULARS)
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FIG.95A

AMOUNT BILLED (YEN)	PAYMENT ID	DESTINATION IP ADDRESS	DESTINATION PORT NO.	RESERVED BAND (bps)	USAGE START DATE AND TIME	USAGE END DATE AND TIME	ISP SERVER IP ADDRESS
aaa	$\beta 1$	130.20.0.2	P2	84K	2001/9/1 9:00	2001/9/1 11:00	134.40.0.2
bbb	$\beta 1$	130.10.0.2	P1	84K	2001/9/1 10:00	2001/9/1 12:00	134.40.0.2
ccc	$\beta 2$	132.20.0.2	P6	84K	2001/9/1 9:00	2001/9/1 12:00	134.40.0.2
ddd	$\beta 1$	130.20.0.2	P2	84K	2001/9/1 9:00	2001/9/1 11:00	132.50.0.2
eee	$\beta 2$	132.20.0.2	P6	84K	2001/9/1 9:00	2001/9/1 12:00	132.50.0.2
fff	$\beta 1$	130.10.0.2	P1	84K	2001/9/1 10:00	2001/9/1 12:00	132.50.0.2
ggg	$\beta 1$	130.20.0.2	P2	84K	2001/9/1 9:00	2001/9/1 11:00	130.40.0.2
hhh	$\beta 1$	130.10.0.2	P1	84K	2001/9/1 10:00	2001/9/1 12:00	130.40.0.2

FIG.95B

PAYMENT ID	CONTENT SERVER IP ADDRESS
$\beta 1$	136.10.0.1
$\beta 2$	140.10.0.1

FIG.95C

DESTINATION IP ADDRESS 136.10.0.1	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (BILLING PARTICULARS)
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FIG.95D

DESTINATION IP ADDRESS 140.10.0.1	TRANSMITTER IP ADDRESS 138.10.0.1	DATA (BILLING PARTICULARS)
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FIG.96A

DESTINATION IP ADDRESS 130.10.0.2	TRANSMITTER IP ADDRESS 136.10.0.1	DATA (BILLING PARTICULARS)
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FIG.96B

DESTINATION IP ADDRESS 130.20.0.2	TRANSMITTER IP ADDRESS 136.10.0.1	DATA (BILLING PARTICULARS)
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FIG.96C

DESTINATION IP ADDRESS 132.20.0.2	TRANSMITTER IP ADDRESS 140.10.0.1	DATA (BILLING PARTICULARS)
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